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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,611	04/02/2004	Kia Silverbrook	HYT005US	9414

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SILVERBROOK RESEARCH PTY LTD
393 DARLING STREET
BALMAIN, NSW 2041
AUSTRALIA

EXAMINER	
PAIK, STEVE S	

ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H·D

Office Action Summary	Application No.	Applicant(s)	
	10/815,611	SILVERBROOK ET AL.	
	Examiner	Art Unit	
	Steven S. Paik	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35 and 49-67* is/are rejected.

7)☒ Claim(s) *36-48* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/20/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: pages 23 and 27 of the Specification include information regarding related applications. It is respectfully requested the blank be updated with corresponding application numbers. Appropriate correction is required.

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claim 60 is objected to because of the following informalities: the claimed the scanning device according to claim 1 is redundant because claim 53 includes the claimed elements recited in claim 1 already. Furthermore, the format of claim 60 appears to be in appropriate. It is respectfully suggested to recite the each and every features of scanning device recited in claim 1 if that is what the applicants intend to claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9, 13, 15, 17-21, 23, 24, 26-29, 31-34, 49-51, and 61-64 are rejected under 35 U.S.C. 102(b) as being anticipated by Bobba et al. (US 5,475,207).

Re claims 1, 2, 15, 17, 26-29, 31, 32, 49-51, and 61-64, Bobba et al. disclose a scanning device adapted to scan an interface surface provided on a product item, the interface surface having disposed thereon coded data indicative of an identity of the product item (The field of the present invention relates to optical scanning systems and particularly to a scanning system capable of successfully reading objects (consumer products with barcode labels) aligned in a variety of orientations.), the product item being provided in a sensing region (scan volume), the scanning device including:

(a) a beam generator (light source such as a laser, laser diode, or any other suitable source) for emitting at least one beam;

(b) at least one rotating holographic optical element (rotating holographic disk, 320, 340, 360, or 370; col. 7, ll. 25-32) for selectively deflecting the beam in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch (col. 1, line 64-col. 2, line 30);

(c) a sensor (detector 329, 339, 359, 537, or 546) for sensing at least some of the coded data on the interface surface (A barcode comprises a start/stop reference and data field-user interactive element) of the product item as the product item passes through the sensing region (scan volume of a checkout system); and

(d) a processor (microprocessor 135/140 or 725) for determining, using at least some of the sensed coded data (col. 9, ll. 1-26), product identity data indicative of the identity (unique information associated with a product commonly appears in a form of a label or sticker with printed barcode information stored in a memory of a scanning/reading device) of the product item and

wherein the scanning device includes at least one beam controller (beam splitter and a rotating holographic disk) for selectively providing the scanning patch at one of a number of positions in the sensing region (beam splitter 538 splits the optical beam 515 into a first beam 517 and a second beam 518.).

Re claim 3, Bobba et al. disclose the scanning device as recited in rejected claim 1 stated above, wherein the scanning device includes at least one beam controller (beam splitter and a rotating holographic disk) for directing the at least one scanning beam along at least a selected one of a number of patch beam paths into the sensing region (beam splitter 538 splits the optical beam 515 into a first beam 517 and a second beam 518. and Figs. 5, 6, and 26-28 disclose scan pattern along a vertical and a horizontal plane generated from different mirror arrays.).

Re claim 4, Bobba et al. disclose the scanning device as recited in rejected claim 3 stated above, wherein each patch beam path extends into the sensing region (scan volume) at a respective angle.

Re claim 5, Bobba et al. disclose the scanning device as recited in rejected claim 1 stated above, wherein the angle between respective patch beam paths is at least one of:

(a) at least 1°;

(b) at least 10°;

(c) at least 30°;

(d) at least 45°; and,

(e) at least 90° (Figs. 5, 6, and 26-28 disclose scan pattern along a vertical and a horizontal plane generated from different mirror arrays.).

Re claim 6, Bobba et al. disclose the scanning device as recited in rejected claim 3 stated above, wherein the beam controller (beam splitter and a rotating holographic disk) being formed from the at least one rotating holographic optical element (col. 7, ll. 25-32).

Re claim 7, Bobba et al. disclose the scanning device as recited in rejected claim 3 stated above, wherein the beam controller further comprises a plurality of mirrors, and wherein the at least one rotating holographic optical element selectively reflects the scanning beam from a selected one of the mirrors into the sensing region (col. 10, ll. 18-46).

Re claim 8, Bobba et al. disclose the scanning device as recited in rejected claim 7 stated above, wherein each mirror defines at least one patch beam path (horizontal or vertical), and wherein the at least one rotating holographic optical element directs the scanning beam along a selected patch beam path (col. 8, ll. 11-66).

Re claim 9, Bobba et al. disclose the scanning device as recited in rejected claim 3 stated above, wherein the sensor (photodiodes, light detector, or CCD) is adapted to sense radiation reflected from the product item along the selected patch beam path.

Re claim 13, Bobba et al. disclose the scanning device as recited in rejected claim 1 stated above, wherein the scanning device includes a filter for filtering radiation incident on the sensor, the filter being at least one of:

(a) a near infrared filter;

(b) a bandpass filter; and

(c) a longpass filter (col. 6, ll. 3-8).

Re claim 18, Bobba et al. disclose the scanning device as recited in rejected claim 1 stated above, wherein the processor generates scan data representing the identity of the scanned product item (col. 9, ll. 16-26).

Re claim 19, Bobba et al. disclose the scanning device as recited in rejected claim 18 stated above, wherein the scan data is the product identity data (col. 9, ll. 16-26).

Re claim 20, Bobba et al. disclose the scanning device as recited in rejected claim 18 stated above, wherein the processor:

(a) determines the product data of the product item during a scan event; and,

(b) generates the scan data if the determined product identity data is different to product identity data determined during previous scan events.

(Stitching is one well known form of correcting/improving unsuccessful barcode scanning. A partially scanned barcode may be considered as one of a previously scanned barcode before achieving a complete scan.).

Re claim 21, Bobba et al. disclose the scanning device as recited in rejected claim 1 stated above,

(a) compares the determined product data (a complete scan) to previously determined product identity data (a partially determined product data from a previous partial scan); and,

(b) generates scan data representing the identity of the product item if the determined product identity data has not been previously determined (A partial scan inherently has a different result from a complete scan.).

Re claim 23, Bobba et al. disclose the scanning device as recited in rejected claim 22 stated above, wherein the processor is adapted to use the redundantly encoded coded data to detect one or more errors in the coded data (col. 9, ll. 1-26).

Re claim 24, Bobba et al. disclose the scanning device as recited in rejected claim 22 stated above, wherein, in response to the detection of one or more from the scanning device performs at least one of:

(a) correcting the one or more detected errors (Stitching is one well known form of correcting/improving unsuccessful barcode scanning.);

(b) signaling a failed scan; and,

(c) ignoring the coded data.

Re claim 33, Bobba et al. disclose the scanning device as recited in rejected claim 1 stated above, wherein the scanning device includes at least deflector for deflecting the scanning beam in the first and second orthogonal directions to thereby generate the raster scan pattern over the scanning patch (col. 1, line 63- col. 2, line 30).

Re claim 34, Bobba et al. disclose the scanning device as recited in rejected claim 1 stated above, wherein the scanning device is adapted to detect the presence of a plurality of product items in the sensing region (The scan volume area is comprised of a plurality of scan pattern that detects and reads barcodes affixed to product items.).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobba et al. (US 5,475,207) in view of Batchko (US 2005/0158866 A1).

9. Re claims 10-12, Bobba et al. disclose the claimed features as discussed above with the exception of including an amplitude modulator within the scanning device.

Batchko discloses an optical device comprising, among other things, an intermediate modules (4100) which may include without limitation passive or active optical elements, lenses, prisms, liquid crystal, arrays of optical elements, mirrors, gratings, holographic optical elements, nonlinear optics, MEMS devices, films, wave plates, optical coatings, polarizers, flats, wedges, diffraction gratings, grating light valves, imaging media and imaging chambers, amplitude and phase modulators and amplitude and phase masks. The optical and scanning modules that may be included in the modules are employed to improve the quality of scanning beams and results of scanning.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have incorporated an amplitude modulator as taught by

Batchko into the teachings of Bobba et al. for the purpose of generating a better quality of scanning beams and an enhanced scanning process.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bobba et al. (US 5,475,207) in view of Bianco (US 4359633A)

Re claim 14, Bobba et al. disclose the claimed features as discussed above with the exception of a coded data printed in infrared ink and a scanner for reading the coded data.

Bianco discloses a label or identification card that has a base with a region with absorbs invisible light and a region which reflects invisible light. The label comprises an indicia (6). Typically, indicia 6 will comprise a bar code, printed on surface 5 in a commercially available black ink. Such ink should absorb substantially all visible light, as well as invisible light, such as infrared. If the indicia are to be scanned with infrared light, then the black ink should contain carbon or another material which absorbs infrared light. The invention pertains to the technical field of documents designed to store information in a manner not visible to the unaided human eye, for the purpose of preserving the confidentiality of the information, and limiting its use to authorized persons. Specifically, the invention pertains to a label or identification card bearing concealed information in the form of a bar code to control access to an area or a machine, for example. Such a label or card may be used in a factory, an office, a military installation, or any other place in which security is desirable.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have incorporated a coded data printed in an infrared ink and a device to read the coded data as taught by Bianco into the teachings of Bobba et al. for the purpose of improving security of encoded data within a label or an interface surface.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bobba et al. (US 5,475,207) in view of Brock (White Paper, cited by the applicant)

Re claim 16, Bobba et al. disclose the claimed features as discussed above with the exception of disclosing an EPC code.

Brock, however, discloses a process for converting a regular and other UPC codes to an EPC. On page 22, he discloses the difference between a UPC code and an EPC code and how the UPC can be converted to an EPC. The conversion process is old and well known in the art for the purpose of implementing a coded data throughout the different geographical regions of the world where different coding scheme is used.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have incorporated an EPC code as taught by Brock into the teachings of Bobba et al. for the purpose of providing a highly robust and acceptable code regardless of regions and systems the code is being implemented.

12. Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobba et al. (US 5,475,207) in view of Bianco (US 4359633A)

Re claim , Bobba et al. disclose the claimed features as discussed above with the exception of a using Reed-Solomon encoding and redundant encoding.

Morelos-Zaragoza discloses that Reed-Solomon codes, which are a subset of Bose-Chadhuri-Hocquenghm (BCH) linear block codes, are commonly used to provide forward error correction (FEC) in a variety of storage and communications systems, including tape, compact disc (CD), digital video disc (DVD), barcodes, cellular telephones, microwave links, satellite communications, digital television, high speed modems, and the like. In a typical Reed-Solomon

system, an encoder takes a block of digital data and adds extra "redundant" bits. The Reed-Solomon decoder processes each block and attempts to correct errors occurring during transmission to recover the original data. The number and type of errors that can be corrected depends on the characteristics of the Reed-Solomon code.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have incorporated the Reed-Solomon encoding scheme coded as taught by Morelos-Zaragoza into the teachings of Bobba et al. for the purpose of encoding data with error correction functions for improved reliability and readability of data.

13. Claims 30, 35, 52-60, and 65-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobba et al. (US 5,475,207) in view of Patel et al. (US 2004/0118928 A1).

Re claims 30, 35, 52-60, Bobba et al. disclose a scanning device adapted to scan an interface surface provided on a product item, the interface surface having disposed thereon coded data indicative of an identity of the product item (The field of the present invention relates to optical scanning systems and particularly to a scanning system capable of successfully reading objects (consumer products with barcode labels) aligned in a variety of orientations.), the product item being provided in a sensing region (scan volume), the scanning device including:

(a) a beam generator (light source such as a laser, laser diode, or any other suitable source) for emitting at least one beam;

(b) at least one rotating holographic optical element (rotating holographic disk, 320, 340, 360, or 370) for selectively deflecting the beam in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch (col. 1, line 64-col. 2, line 30);

(c) a sensor (detector 329, 339, 359, 537, or 546) for sensing at least some of the coded data on the interface surface (A barcode comprises a start/stop reference and data field-user interactive element) of the product item as the product item passes through the sensing region (scan volume of a checkout system); and

(d) a processor (microprocessor 135/140 or 725) for determining, using at least some of the sensed coded data (col. 9, ll. 1-26), product identity data indicative of the identity (unique information associated with a product commonly appears in a form of a label or sticker with printed barcode information stored in a memory of a scanning/reading device) of the product item.

Bobba et al. disclose the scanning system is employed at a supermarket checkout counter (POS system 730 is a computing system which includes a processor and data storing element), but fail to disclose a conveyor system.

Patel et al. disclose an optical code reader (12). The reader may be a unit integrated into a stationary fixture, such as a checkout counter, a doorway molding, a toll booth, a station on a conveyor belt, etc. Patel et al. further disclose a user may be informed of an unsuccessful read by a displayed message, an audible tone or an LED illumination. The integration of the barcode reader with alarming function provides a user verification of a successful reading.

In view of Patel et al., it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to further incorporate an optical code reader with an alarming function integrated into a conveyor belt in addition to the scanning device of Bobba et al. due to the fact that more convenient and accurate optical data reading can be accomplished for the purposes of reducing a human effort and unsuccessful code reading.

Re claims 65-67, Bobba et al. disclose the scanning device as recited in rejected claim 1 stated above, further including a laser scanning device (Fig. 18) adapted to scan an interface surface provided on a product item, the interface surface having disposed thereon coded data which includes; at a plurality of locations on the interface surface (top/bottom/or side), a corresponding plurality of coded data portion, each coded data portion being indicative of an identity of the product item, the laser scanning device including:

a beam generator (light source such as a laser, laser diode, or any other suitable source) for emitting at least one beam;

at least one rotating holographic optical element (rotating holographic disk, 320, 340, 360, or 370) for selectively deflecting the beam in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch (col. 1, line 64-col. 2, line 30);

a sensor (detector 329, 339, 359, 537, or 546) for sensing at least some of the coded data on the interface surface (A barcode comprises a start/stop reference and data field-user interactive element) of the product item as the product item passes through the sensing region (scan volume of a checkout system); and

a processor (microprocessor 135/140 or 725) for determining, using at least some of the sensed coded data (col. 9, ll. 1-26), product identity data indicative of the identity (unique information associated with a product commonly appears in a form of a label or sticker with printed barcode information stored in a memory of a scanning/reading device) of the product item.

However, Bobba et al. do not specifically disclose the scanning device includes a housing adapted to be held by a user.

Patel et al. disclose a scanner (12) that comprises a housing adapted to be held by a user in use. The handheld feature obvious provides portability and mobility to its user.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have incorporated the handheld scanning device as taught by Patel et al. into the teachings of Bobba et al. for the purpose of manufacturing a scanning device that provides portability and mobility to be more efficient and productive with the scanning device.

Allowable Subject Matter

14. Claims 36-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: none of the cited prior art of the record discloses, teaches, or fairly suggests the claimed encoded data being disposed on or a substrate in accordance with at least one layout, the layout having at least order two rotational symmetries. The layout further includes at least n identical sub-layouts rotated 1/n revolutions apart about a center of rotational symmetry of the layout, where n is at least two. The coded data disposed in accordance with each sub-layout including rotation-indicating data distinguishes the rotation of that sub-layout from the rotation of at least one other sub-layout within the layout.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gurevich et al. (US 2002/0148900 A1) discloses optical images and scanners

comprising, among other things, holographic optical elements (HOE) to produce optical modification of output laser beams and light received and directed by the optical scanning system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven S. Paik whose telephone number is 571-272-2404. The examiner can normally be reached on Monday - Friday 5:30a-2:00p (Maxi-Flex*).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven S. Paik
Primary Examiner
Art Unit 2876

ssp